

LISTING OF CLAIMS:

Claims 1 and 2 (Previously cancelled)

Claim 3 (Currently amended): The surface-modified, pyrogenically produced oxides doped by aerosol, characterized in that the oxides are selected from the group consisting of SiO_2 , Al_2O_3 , TiO_2 , B_2O_3 , ZrO_2 , In_2O_3 , ZnO , Fe_2O_3 , Nb_2O_5 , V_2O_5 , WO_3 , SnO_2 and GeO_2 , wherein the surface is modified with one or several compounds selected from the following groups:

a) Organosilanes having either formula $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$ or $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n-1})$, wherein

R = alkyl, and

n = 1 – 20;

b) Organosilanes having either formula $\text{R}'_x(\text{RO})_y\text{Si}(\text{C}_n\text{H}_{2n+1})$ or $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$, wherein

R = alkyl,

R' = alkyl,

R' = cycloalkyl

n = 1 – 20,

x+y = 3,

x = 1, or 2, and

y = 1, or 2;

c) Halogen organosilanes having either formula $X_3 Si(C_nH_{2n+1})$ or $X_3 Si(C_nH_{2n-1})$, wherein

$X = Cl, \text{ or } Br, \text{ and}$

$n = 1 - 20;$

d) Halogen organosilanes having either formula $X_2 (R') Si(C_nH_{2n+1})$ or

$X_2 (R') Si(C_nH_{2n-1})$, wherein

$X = Cl, \text{ or } Br$

$R' = \text{alkyl}[[,]] \text{ and } \underline{\text{cycloalkyl}}, \text{ and}$

$n = 1 - 20;$

e) Halogen organosilanes having formula $X (R')_2 Si(C_nH_{2n+1})$ or

$X (R')_2 Si(C_nH_{2n-1})$, wherein

$X = Cl, \text{ or } Br;$

$R' = \text{alkyl}[[,]] \text{ and } \underline{\text{cycloalkyl}}, \text{ and}$

$n = 1 - 20;$

f) Organosilanes having the formula $(RO)_3Si(CH_2)_m-R'$

$R = \text{alkyl},$

$m = 0, \text{ or } 1-20, \text{ and}$

$R' = \text{methyl-}, \text{ aryl-}, -C_6H_5, \text{ substituted phenyl groups},$

$-C_4F_9, OCF_2-CHF-CF_3, -C_6F_{13}, -O-CF_2-CHF_2,$

$-NH_2, =N_3, -SCN, -CH=CH_2, -NH-CH_2-CH_2-NH_2,$

$-N-(CH_2-CH_2-CH_2NH_2)_2$,
 $-OOC(CH_3)C=CH_2$,
 $-OCH_2-CH(O)CH_2$,
 $-NH-CO-N-CO-(CH_2)_5$,
 $-NH-COO-CH_3$, $-NH-COO-CH_2-CH_3$, $-NH-(CH_2)_3Si(OR)_3$,
 $-S_x-(CH_2)_3Si(OR)_3$, where x is 0, one or more,
 $-SH$, or
 $-NR'R''R'''$, wherein R' = alkyl, or aryl; R'' = H, alkyl, aryl; and R''' = H, alkyl, aryl, benzyl, or $C_2H_4N(R'''')_2$, wherein R'''' = H, or alkyl;

g) Organosilanes having the formula $(R'')_x(RO)_ySi(CH_2)_m-R'$, wherein

R'' = alkyl, or cycloalkyl,

$x+y = 2$,

$x = 1$, or 2 ,

$y = 1$, or 2 ,

$m = 0$, or 1 to 20 , and

R' = methyl-, aryl, $-C_6H_5$, substituted phenyl groups,

$-C_4F_9$, $-OCF_2-CHF-CF_3$, $-C_6F_{13}$, $-O-CF_2-CHF_2$,

$-NH_2$, $-N_3$, SCN , $-CH=CH_2$, $-NH-CH_2-CH_2-NH_2$,

$-N-(CH_2-CH_2-NH_2)_2$,

$-OOC(CH_3)C=CH_2$,

$-OCH_2-CH(O)CH_2$,

$\text{-NH-CO-N-CO-(CH}_2\text{)}_5$,
 -NH-COO-CH_3 , $\text{-NH-COO-CH}_2\text{-CH}_3$, $\text{-NH-(CH}_2\text{)}_3\text{Si(OR)}_3$,
 $\text{-S}_x\text{-(CH}_2\text{)}_3\text{Si(OR)}_3$, where x is 0, one or more, or -SH , or
 -NR'R''R''' , wherein R' = alkyl, or aryl; R'' = H,
 alkyl, or aryl; and R''' = H, alkyl, aryl, benzyl, or
 $\text{C}_2\text{H}_4\text{N(R''')}_2$, wherein R'''' = H, or alkyl ;

h) Halogen organosilanes having the formula $\text{X}_3\text{Si (CH}_2\text{)}_m\text{-R'}$, wherein

$\text{X} = \text{Cl, or Br,}$

$m = 0, 1 - 20,$

R' = methyl-, aryl[[.]], $\text{-C}_6\text{H}_5$, substituted phenyl groups

$\text{-C}_4\text{F}_9$, $\text{-OCF}_2\text{-CHF-CF}_3$, $\text{-C}_6\text{F}_{13}$, $\text{-O-CF}_2\text{-CHF}_2$,
 -NH_2 , -N_3 , SCN , -CH=CH_2 , $\text{-NH-CH}_2\text{-CH}_2\text{-NH}_2$,
 $\text{-N-(CH}_2\text{-CH}_2\text{-NH}_2\text{)}_2$,
 $\text{-OOC (CH}_3\text{)C = CH}_2$,
 $\text{-OCH}_2\text{-CH(O) CH}_2$,
 $\text{-NH-CO-N-CO-(CH}_2\text{)}_5$,
 -NH-COO-CH_3 , $\text{-NH-COO-CH}_2\text{-CH}_3$, $\text{-NH-(CH}_2\text{)}_3\text{Si(OR)}_3$,
 $\text{-S}_x\text{-(CH}_2\text{)}_3\text{Si(OR)}_3$, where x is 0, one or more, or
 -SH ;

i) Halogen organosilanes having the formula $\text{(R)X}_2\text{Si(CH}_2\text{)}_m\text{-R'}$, wherein

X = Cl, or Br,

R = alkyl such as methyl-, ethyl-, or propyl-,

m = 0, or 1 – 20, and

R' = methyl-, aryl-, -C₆H₅, substituted phenyl groups,

-C₄F₉, -OCF₂-CHF-CF₃, -C₆F₁₃, -O-CF₂-CHF₂,

-NH₂, -N₃, SCN, -CH=CH₂, -NH-CH₂-CH₂-NH₂,

-N-(CH₂-CH₂-NH₂)₂,

-OOC (CH₃)C = CH₂,

-OCH₂-CH(O) CH₂,

-NH-CO-N-CO-(CH₂)₅,

-NH-COO-CH₃, -NH-COO-CH₂-CH₃,

-NH-(CH₂)₃Si(OR)₃,

-S_x-(CH₂)₃Si(OR)₃, where x is 0, one or more, or

-SH;

(j) Halogen organosilanes having the formula (R)₂X Si(CH₂)_m-R', wherein

X = Cl, or Br,

R = alkyl,

m = 0, or 1 – 20, and

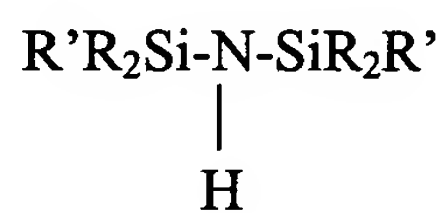
R' = methyl-, aryl-, -C₆H₅, substituted phenyl groups,

-C₄F₉, -OCF₂-CHF-CF₃, -C₆F₁₃, -O-CF₂-CHF₂,

-NH₂, -N₃, SCN, -CH=CH₂, -NH-CH₂-CH₂-NH₂,

$-\text{N}-(\text{CH}_2-\text{CH}_2-\text{NH}_2)_2,$
 $-\text{OOC}(\text{CH}_3)\text{C}=\text{CH}_2,$
 $-\text{OCH}_2-\text{CH}(\text{O})\text{CH}_2,$
 $-\text{NH}-\text{CO}-\text{N}-\text{CO}-(\text{CH}_2)_5,$
 $-\text{NH}-\text{COO}-\text{CH}_3, -\text{NH}-\text{COO}-\text{CH}_2-\text{CH}_3, -\text{NH}-(\text{CH}_2)_3\text{Si}(\text{OR})_3,$
 $-\text{S}_x-(\text{CH}_2)_3\text{Si}(\text{OR})_3,$ where x is 0, one or more, or
 $-\text{SH};$

(k) Silazanes having the formula

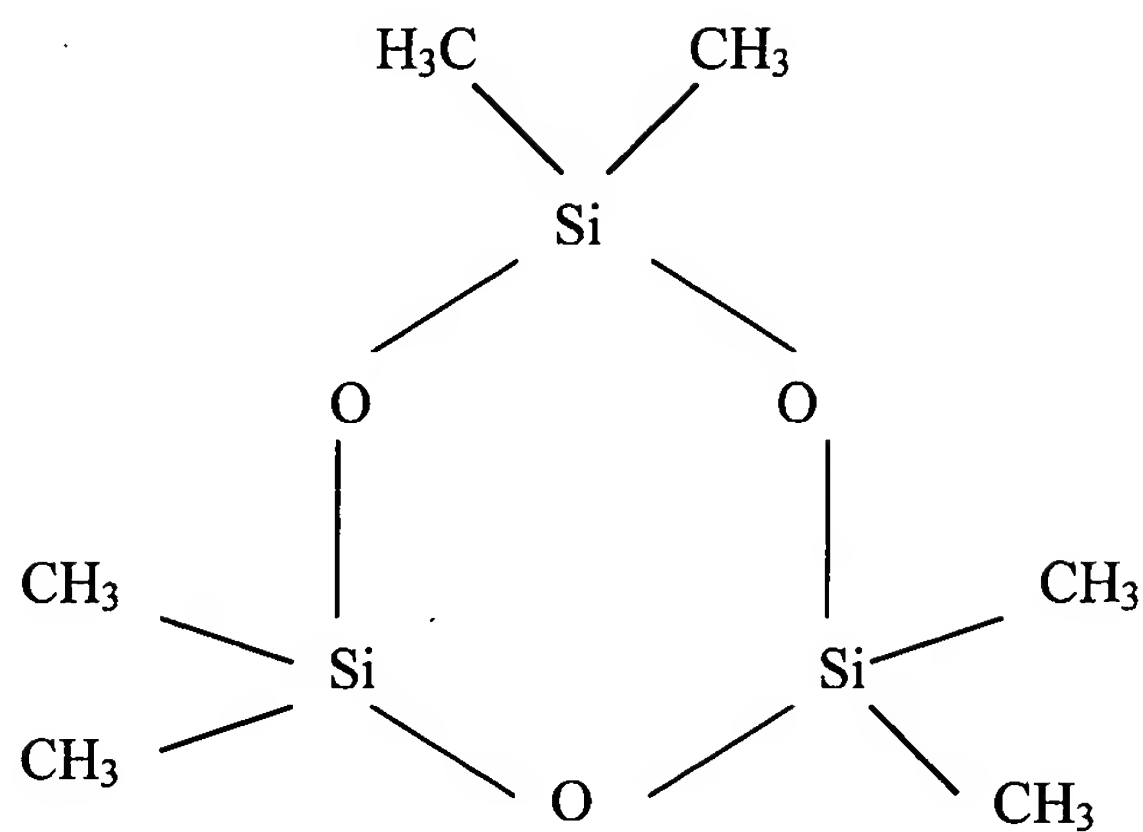


wherein $\text{R} = \text{alkyl}$, and

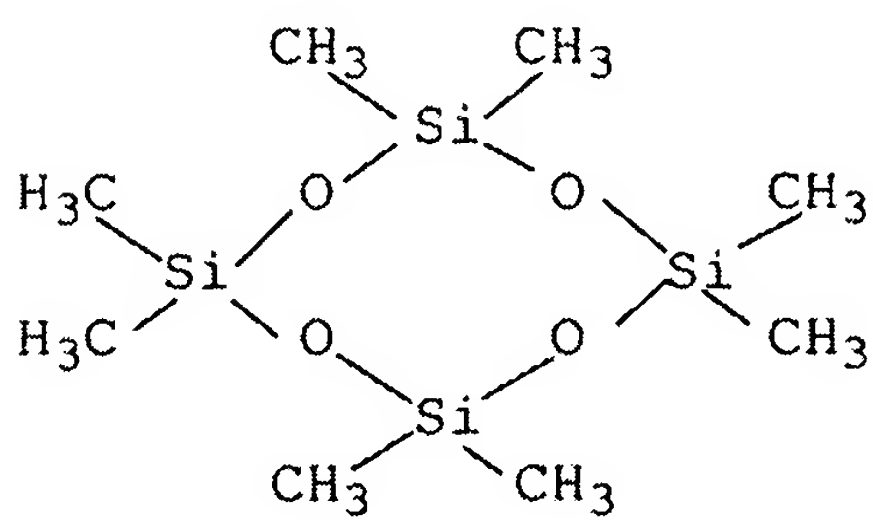
$\text{R}' = \text{alkyl}$, or vinyl; or

(l) Cyclic polysiloxanes D 3, D 4 or D 5,

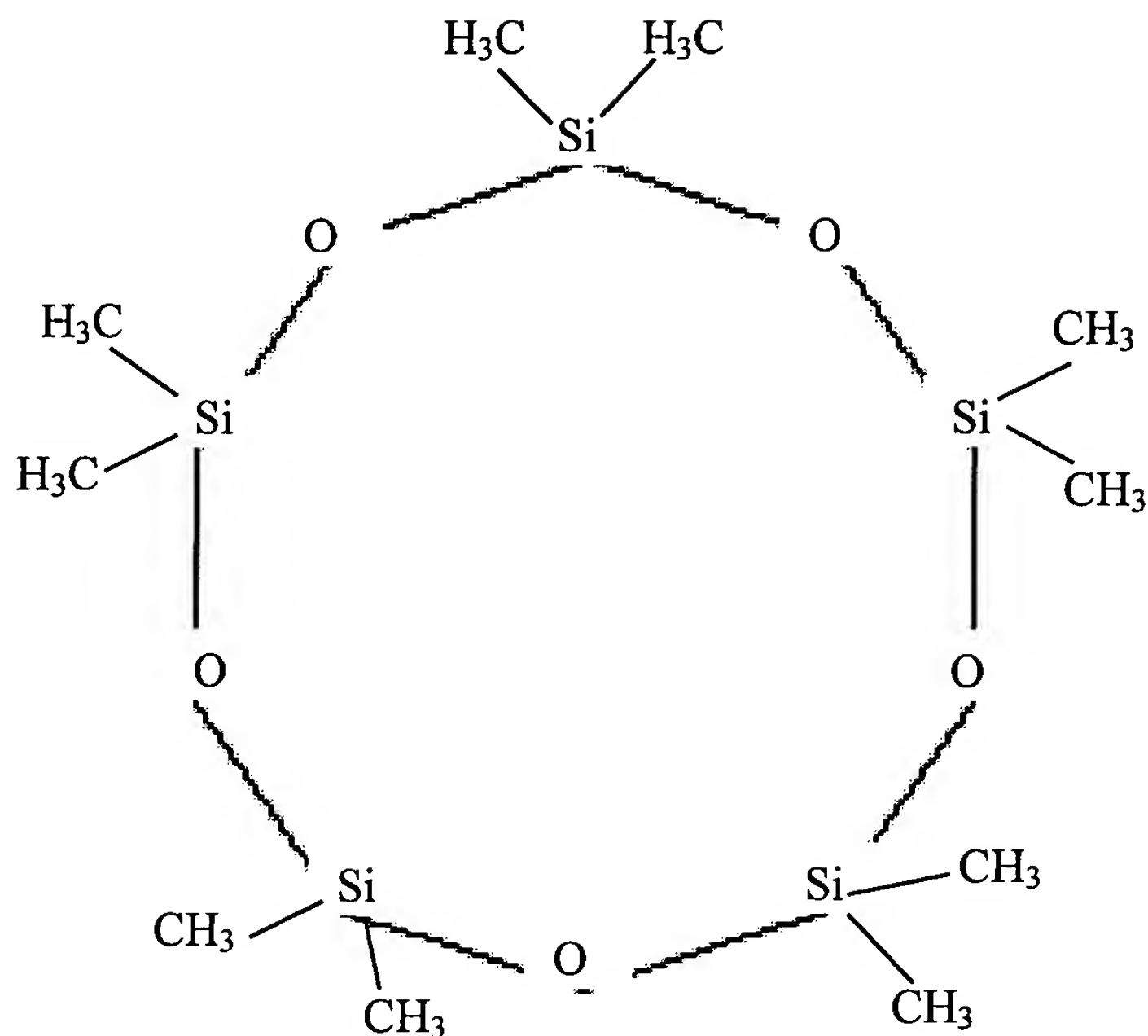
where 1) D3 has the formula:



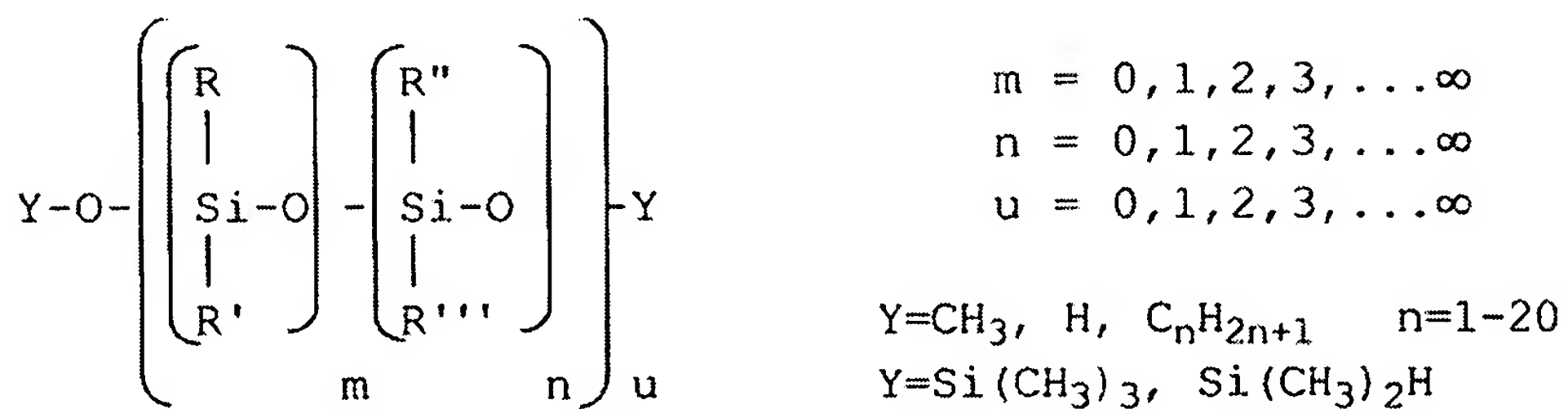
2) D4 has the formula:



and 3) D5 has the formula:



m) Polysiloxanes or silicone oils having any one of the formula



, $Si(CH_3)_2C(CH_3)_2(OCH_3)$, or

$Si(CH_3)_2(C_nH_{2n+1})$, wherein $n=1-20$,

wherein,

R = alkyl, aryl, $(\text{CH}_2)_n\text{-NH}_2$, or H,

R' = alkyl, aryl, $(\text{CH}_2)_n\text{-NH}_2$, or H,

R'' = alkyl, aryl, $(\text{CH}_2)_n\text{-NH}_2$, or H,

R''' = alkyl, aryl, $(\text{CH}_2)_n\text{-NH}_2$, or H.

Claim 4 (Previously amended): A method of producing the surface-modified oxides in accordance with claim 3, comprising placing pyrogenically produced oxides doped by aerosol in a suitable mixing container, spraying the oxides under intensive mixing with the surface-modification reagent or a mixture of several surface-modification reagents.

Claim 5 (Previously amended): In a reinforcing filler composition wherein the improvement comprises the surface-modified oxides according to claim 3 as reinforcing filler.

Claim 6 (Original) The method of claim 4 wherein the spraying step includes spraying with water and/or acid prior to the spraying with the surface-modification reagent or a mixture of several surface-modification reagents.

Claim 7 (Original) The method of claim 4 further comprising re-mixing at 15 to 30 minutes and tempering at a temperature of 100 to 400 °C for a period of 1 to 6 hours.

Claim 8 (Currently amended) The surface-modified, pyrogenically produced oxides according to claim 3 wherein the cyclic polysiloxanes is ~~type~~ D 4.

Claim 9 (Cancel)